

DEPARTMENT OF TRANSPORTATION**DIVISION OF ENGINEERING SERVICES**

Office of Structural Materials

Quality Assurance and Source Inspection



Bay Area Branch

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Contract #: 04-0120F4Cty: SF/ALA Rte: 80 PM: 13.2/13.9File #: 69.28**WELDING INSPECTION REPORT****Resident Engineer:**Pursell, Gary**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-000709**Date Inspected:** 26-Oct-2007**Project Name:** SAS Superstructure**OSM Arrival Time:** 630**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1500**Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **Location:** Shanghai, China**CWI Name:** Li Gang & Sha Zhi**CWI Present:** Yes No**Inspected CWI report:** Yes No N/A**Rod Oven in Use:** Yes No N/A**Electrode to specification:** Yes No N/A**Weld Procedures Followed:** Yes No N/A**Qualified Welders:** Yes No N/A**Verified Joint Fit-up:** Yes No N/A**Approved Drawings:** Yes No N/A**Approved WPS:** Yes No N/A**Delayed / Cancelled:** Yes No N/A**Bridge No:** 34-0006**Component:** Caltrans Mockup**Summary of Items Observed:**

Caltrans Quality Assurance (QA) Inspector, Mike Hasler was present to observe the fit up, welding and related activities associated with the fabricating of Caltrans Mock-up, 77M, 89M, 114M and U-Rib Trial Assembly, for the San Francisco Oakland Bay Self Anchored Suspension Bridge, at Zhenhua Port Machinery Company (ZPMC) facility on Changing Island.

Item	Description	WBS	Dwg No.	Status
1	Strut Assembly	NA	NA	ZPMC UT

Mock-Up 89M, Strut Sub-Assembly: ZPMC QC Inspector, Mr. Fu Yu hong informed Caltrans Inspector that ZPMC would be performing ultrasonic testing in the tower shop. Caltrans QA Inspector observed ZPMC Quality Control (QC), ultrasonic test (UT) technician, Mr. Li Li Ming perform testing of complete joint penetration (CJP) tee-joint welds, identified as weld 9A/B face, at piecemark SA24-1 and weld 10 A/B face, piecemark SA24-2. Mr. Li Li Ming was observed following ZPMC ultrasonic examination procedure, identified as ZPQC-UT-01. Assembly SA 24-1 was found acceptable. SA24-2, weld 10 A was marked up for further evaluation. The area that was marked up by QC appeared to be over 40 percent of the weld. ZPMC QC inspector, Fu Yu hong stated that this was a preliminary UT inspection and that the assemblies would be retested for the final UT examination after the welding run-off tabs were removed and surfaces ground smooth. The American Bridge/Fluor inspector, Mr. Kevin Dye was present at the start of the testing, but did not stay for all the testing. Mr. Fu Yu hong stated that he needed to talk to Mr. Kevin Dye for direction and thought that since this was a preliminary test, Caltrans is not required to witness the test and that the UT finding appeared to be no-weld metal removal related. Following digital pictures illustrate ZPMC new UT calibration block, UT in progress and area marked up at weld 10 A.

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| 2 | Longit, Stiffeners | NA | NA | Welding |
|---|--------------------|----|----|---------|
- Mock-Up 89M, Skin Plate C/D, Longitudinal Stiffener Plates: Caltrans QA Inspector observed flux cored arc welding (FCAW), splice plate fill pass weld, joining piecemark mp5335B1 to mp541-1 stiffener plates, in the flat position. The welder is identified as Mr. Lei Leihao, welder stamp 053619. The welder is using welding procedure specification WPS-B-T-2231-B-U3-F. Caltrans QA observed ZPMC Quality Control inspector, Mr. Sha Zhi and Bureau Veritas (BV) inspector, Mr. Li Gang, monitoring welding activities at the workstation. Caltrans QA Inspector measured current welding parameters at approximately 300 amps, 31 volts and 285 millimeters per minute (mm/min) travel speed. Preheat and interpass temperatures were verified during welding activities. The preheat temperature prior to the start of welding measures more than 110 Celsius (230 degree Fahrenheit) but less than 232 Celsius (450 degrees Fahrenheit) during maximum interpass temperature verification. FCAW welding consumable is verified and identified as Supercored 71H, classification E71T-1, diameter 1.4 mm (.055 inches). Following digital picture illustrates welding in progress.

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| 3 | U-Rib Trial Assy | NA | NA | Practice Welding |
|---|------------------|----|----|------------------|
- OBG U-Rib Trial Assembly: Caltrans QA Inspector observed ZPMC practice welding on the u-rib trial assembly. ZPMC was observed welding the partial joint penetration (PJP) root pass with the gas metal arc welding (GMAW) process. Caltrans QA Inspector observed ABF and ZPMC inspectors were present during the practice welding of the assembly.

Summary of Conversations:

As identified within the contents of this report.

Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Mazen Wahbeh, (818) 292-0659, who represents the Office of Structural Materials for your project.

Inspected By:	Hasler, Mike	Quality Assurance Inspector
Reviewed By:	Cuellar, Robert	QA Reviewer
